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Positive Impact of Biotechnology on Environmental Control & Waste Management According to Ron Bauer

By Special Guest
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energy sources.

While good initiatives in their own right, their impact would represent only a fraction of the global warming story says Ron Bauer, the Managing Partner of Theseus Capital Ltd, a Life Sciences focused investment holding company, who was previously the co-founder of Turkana Energy, which held one of Africa's most valuable and prolific oil and gas concessions in Kenya and helped Africa Oil to become one of Canada's most valuable oil & gas exploration companies after its 2009 merger.

The Staggering Amount of Waste Production

Another important aspect is waste, which humanity is producing in staggering numbers. The World Bank estimates that we are now producing 1.3 billion tons of waste each year, led by the United States and China. That figure will only continue to rise in the years and decades to come, with many African and Asian nations expected to double the amount of waste they produce.

Nearly half of that global waste ends up in unregulated or illegal landfills, where it can cause all manner of environmental degradation. Toxic emissions from landfills and waste burning fill the air and our lungs, pollution contaminates our rivers and groundwater, and garbage clogs our sewers, contributing to flooding.

Then there are plastics, over 90% of which end up in landfills or the environment and which can take decades or even centuries to decompose, all the while releasing toxic chemicals into the soil.

If the crisis seems dire, it is, but technological advancements are being developed that could allow us to safely dispose of more of our damaging waste.

The Role of Biotech

On the plastics front, multiple strains of bacteria and even fungi have been discovered in recent years that can consume plastic. Biotech companies in France, Germany, and the U.S have since gone to work developing enzymes from these micro organisms which could be used to break down plastic on a large scale.

Ron Bauer says these enzymes could provide a big advantage over traditional recycling methods, bypassing the need to clean the plastic and breaking it down into more useful components that could enhance the economic viability of recycling.

An even more intriguing option would be to simply let these enzymes loose on the environment at large, allowing them to eat through landfills and the plastic mounds choking our oceans.

Other promising initiatives that could address the waste and energy problems simultaneously are being developed by Danish company Novozymes and Illinois biotech firm LanzaTech. Novozymes also uses enzymes to break down waste, in this case turning used cooking oils into biodiesel. LanzaTech is instead working on a gas fermentation technology that could convert carbon-rich sources of waste into biofuel.

Such renewable biofuels can also be created from algae and other materials, while bioplastics are also being created from plants and other resources that reduce our dependence on toxic, petroleum-based plastics. Biopesticides and biofertilizers are also being developed which could eliminate the need for us to spray plumes of toxic chemicals on our crops.

Ron Bauer says these technologies are just the tip of the biotechn storm that is brewing which has the potential to greatly enhance environmental sustainability initiatives and practices across the board, improving our own health and the health of the planet we call home.

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